REMARKS

Claims 15-24 are all of the claims presently pending in the application. Claims 15-22 have been amended to more particularly define the invention. Claims 23 and 24 have been added to claim additional features of the invention.

It is noted that the claim amendments are made only for more particularly pointing out the invention, and not for distinguishing the invention over the prior art, narrowing the claims or for any statutory requirements of patentability. Further, Applicants specifically state that no amendment to any claim herein should be construed as a disclaimer of any interest in or right to an equivalent of any element or feature of the amended claim.

Claims 15, 19-20 and 22 stand rejected under 35 U.S.C. § 102(e) as being anticipated by Koike et al. (U.S. Patent No. 5,945,689) (hereinafter "Koike"). Claims 16-18 and 21 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Koike.

These rejections are respectfully traversed in the following discussion.

I. THE CLAIMED INVENTION

The claimed invention (e.g., as defined by exemplary claim 15) is directed to a light-emitting device using a gallium nitride compound semiconductor. The light-emitting device includes an emission layer with a multi quantum-well (MQW) structure, in which a barrier layer and a well layer are formed alternatively, an n-layer made of $Al_xGa_{1-x}N$, wherein $0 \leq x \leq 0.06$, having a thickness from 50 nm to 300nm, a substrate, and a buffer layer formed on the substrate, wherein the barrier layer is made of $A1_xGa_{1-x}N$.

Conventional light-emitting devices using gallium nitride compound semiconductors are known to have an emission layer made on InGaN or AlGaN. A problem persists in the luminous efficiency of these conventional devices. Specifically, conditions for emitting light are not always optimized in the conventional light-emitting devices using gallium nitride.

The claimed invention of exemplary claim 1, on the other hand, provides a light-emitting device including an emission layer and an n-layer made of $Al_xGa_{1-x}N$, wherein $0 \leq x \leq 0.06$, having a thickness from 50 nm to 300 nm (see Application at page 6, lines 12-13). This allows the claimed invention to improve the luminous efficiency of the light-emitting device (see Application at page 2, lines 21-23).

II. THE PRIOR ART REFERENCE

The Examiner alleges that Koike teaches the claimed invention of claims 15, 19-20 and 22. The Examiner further alleges that the claimed invention of claims 16-18 and 21 would have been unpatentable in view of Koike. Applicants submit, however, that there are elements of the claimed invention which are neither taught nor suggested by Koike.

That is, Koike does not teach or suggest "*an n-layer comprising $Al_xGa_{1-x}N$, wherein $0 \leq x \leq 0.06$, having a thickness from 50 nm to 300 nm*" as recited in claim 15.

The Examiner attempts to rely on Figure 12 and column 6, lines 13-20 of Koike to support her allegations. The Examiner, however, is clearly incorrect.

Nowhere, in this Figure nor this passage (nor anywhere else for that matter) does Koike teach or suggest a light-emitting device using a gallium nitride compound semiconductor including an n-layer made of $Al_xGa_{1-x}N$, wherein $0 \leq x \leq 0.06$, having a thickness from 50 nm to 300 nm. Indeed, the Examiner does not even allege that Koike teaches or suggests this feature.

The emission layer and the n-layer, having the composition and thickness recited in exemplary claim 15, enable the claimed invention to improve the crystallinity of a layer formed on the n-layer. The combination of elements recited in claim 15 also prevents holes from diffusing to the substrate side of the light emitting device which are emitted from the emission layer and pass over the n-layer (see Application at page 6, lines 12-20).

As a result, the light-emitting device of the present invention can emit ultra-violet rays effectively. Especially, the claimed invention of exemplary claim 24 is effective for emitting ultra-violet rays. These features are not taught or suggested by Koike.

Therefore, Applicants submit that there are elements of the claimed invention that are not taught or suggest by Koike. Therefore, the Examiner is respectfully requested to withdraw this rejection.

III. NEW CLAIMS

New claims 23 and 24 have been added to provide more varied protection for the claimed invention and to claim additional features of the invention. These claims are independently patentable because of the novel features recited therein.

Applicants respectfully submit that new claims 23-24 are patentable over any combination of the applied references at least for analogous reasons to those set forth above

with respect to claims 15-22.

IV. FORMAL MATTERS AND CONCLUSION

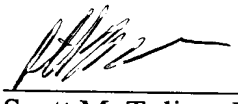
In view of the foregoing, Applicants submit that claims 15-24, all of the claims presently pending in the application, are patentably distinct over the prior art of record and are in condition for allowance. The Examiner is respectfully requested to pass the above application to issue at the earliest possible time.

Should the Examiner find the application to be other than in condition for allowance, the Examiner is requested to contact the undersigned at the local telephone number listed below to discuss any other changes deemed necessary in a telephonic or personal interview.

The Commissioner is hereby authorized to charge any deficiency in fees or to credit any overpayment in fees to Attorney's Deposit Account No. 50-0481.

Respectfully Submitted,

Date: December 21, 2007



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